

a CCD camera on one side of the conveyor having a camera image,

a light source, having an illumination area, on the other side of the conveyor, for imaging the bottle on said CCD camera image,

means for defining on said illumination area light intensities varying between a minimum brightness level that will permit the identification of a light blocking defect and a maximum brightness level, the brightness level varying spatially, cyclically, and continuously at a rate of change which is less than a rate of change that would be identified as a defect,

computer means for analyzing said camera image by comparing neighboring pixels to determine the rate of change in brightness level to identify defects where the rate of change exceeds a defined value.

2. A machine for inspecting the wall of a bottle according to claim 1, wherein said light source comprises a plurality of L.E.D. rows.

3. A machine for inspecting the wall of a bottle according to claim 2, wherein said plurality of L.E.D. rows define a plurality of row groups each including a row having a maximum brightness level, a row having a minimum brightness level, at least one row intermediate said row having said maximum brightness level and said row having said minimum brightness level having a brightness

level between said minimum brightness level and said maximum brightness level, and at least one row on the side of the row having the minimum brightness level remote from said row having the maximum brightness level having a brightness level between the minimum brightness level and the maximum brightness level.

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4. A machine for inspecting the profile and wall of a bottle according to claim 3, wherein there are a plurality of vertical L.E.D. rows intermediate the row having the minimum brightness level and the row having the maximum brightness level and the brightness level of said plurality of intermediate rows uniformly reduces from the row having the maximum brightness level to the row having the minimum brightness level.

5. A machine for inspecting the profile and wall of a bottle according to claim 4, wherein there are a plurality of vertical L.E.D. rows on the side of said row having the minimum brightness level remote from said row having the maximum brightness level and the brightness level of said plurality of said rows on the side of said row having the minimum brightness level remote from said row having the maximum brightness level uniformly increasing in brightness level proceeding away from the row having the minimum brightness level.

6. A machine for inspecting the profile and wall of a bottle according to claim 5, wherein the row having the minimum brightness level has a brightness level of about 20% of the maximum brightness level and wherein each of said vertical L.E.D. row groups has three vertical rows intermediate the row having the minimum brightness level and the row having the maximum brightness level, with the row adjacent the row having the minimum brightness level having a brightness level of about 40% of the maximum brightness level and the row adjacent the row having the maximum brightness level having a brightness level of about 80% of the maximum brightness level and the intermediate of the three vertical rows intermediate the row having the minimum brightness level and the row having the maximum brightness level having a brightness level of about 60% of the maximum brightness level.

7. A machine for inspecting the profile and wall of a bottle according to claim 6, wherein each of said vertical L.E.D. row groups has three vertical rows on the side of the row having the minimum brightness level remote from the row having the maximum brightness level, with the row adjacent the row having the minimum brightness level remote from the row having the maximum brightness level having a brightness level of about 40% of the maximum brightness level and the next of the three vertical rows on the side of the row having the minimum brightness level remote from the row having the maximum brightness level having a brightness level of about 60% of the maximum brightness level and the last of